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ABSTRACT

Intended as an instructional aid for teachers of general business and other secondary school business courses, this annual bulletin discusses the following four general economic concepts: Opportunity costs, supply and demand, industrial organization, and marginal analysis. For each concept, principles are developed which can often be applied in business decisionmaking, examples and applications are given, and selected teaching suggestions and references are provided. (HD)

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BULLETIN NO. 206

BASIC ECONOMIC CONCEPTS IN BUSINESS EDUCATION

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The University of the State of New York
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September 1976

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Dear Colleague:

Each year the Bureau staff seeks to identify a phase of business education that warrants greater emphasis. Undoubtedly the recent economic recession has focused the attention of many families on problems of limited financial resources and tremendous wants. Perhaps for the first time, some young families are experiencing the realities of unemployment, inflation, limited national resources and the many ecological problems associated with pollution and waste. An informed citizen today must have a grasp of the advantages of the economic system subscribed to in the United States, of the workings of our market economy, of domestic and international money systems and their relationship to credit, and, most certainly, the role that government plays in our economic system.

An understanding of basic economic theory is perhaps more important today than ever before in history. The complexity of all economic systems, not only that of our own country, is so great that even the most learned economists are not always in total agreement.

To assist business teachers to understand these complex yet essential concepts, Dr. Donald E. Lewis, Assistant Professor of Economics at Russell Sage College, Troy, New York, has prepared this annual bulletin. Dr. Lewis has drawn upon his experience as an innovative and creative instructor to present several instructional techniques easily adaptable to classes in general business and other secondary school business courses.

It behooves every business teacher to continue to sharpen his or her own economic competence and to seek ways for helping students in our general business courses to become more familiar with the basic economic tools and concepts so important to everyone's survival.

Hobart H. Conover, Chief
Bureau of Business Education

Douglas T. Adamson, Director, Division of
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Introduction

The last ten years have witnessed the publication of numerous "how to do it" books: How to buy a car, obtain a cash loan, make money in the stock market, profit from a devaluation, make your own home repairs, find inner peace, and so forth. People seem to want simple, clear-cut formulas and prescriptions for attaining their objectives. Unfortunately, most problems are complex and unique so that simple, easy-to-find solutions are seldom available.

Economics is not a discipline that lends itself to this "how to do it" philosophy. No economist has ever written a book entitled "Five Easy Steps to Understanding the Economic System." Nevertheless, economists have developed tools, concepts, and principles which, when used with discretion, can aid in the understanding and solution of many societal problems.

Four general economic topics have been selected for inclusion in this annual bulletin: (1) Opportunity Costs, (2) Supply and Demand, (3) Industrial Organization, and (4) Marginal Analysis. Within each topic, principles have been developed which can often be applied in business decision-making. The application of these principles is widespread, but seldom will neat, unambiguous solutions result. Each concept will be explained, numerous examples and applications will be given, and selected teaching suggestions and references will be provided. And finally, the principle will be related to specific pages of the General Business and Business Organization and Management syllabi where the principle has direct application.

Understanding economics is neither a necessary nor a sufficient condition for success in the business world. There are numerous examples of successful corporation presidents who have had little or no formal training in economics and who lack a fundamental grasp of many of the tools of the economist. At the same time, many people with considerable formal education in economics fail miserably in the business community. We might then raise the question, "Why bother with the abstract ideas of economics?" The answer is simple; economics is a way of thinking that can often shed light on a variety of problems likely to occur in the normal course of owning or managing a business or a home. Will economics offer clear-cut solutions to all problems? No! Instead it will provide tools and concepts which can facilitate rational decision-making.

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Opportunity Cost

The Concept

Managers are decision makers, and with every decision there is an opportunity cost. Sometimes these opportunity costs are monetary. (Putting money into the stock market requires the investor to forego the opportunity of earning interest on that money if it were on deposit in a savings account.) At other times, however, opportunity costs are not monetary. (Instead of reading a book, a person might be playing golf.) Opportunity costs are the sacrifices that one makes as a result of a decision.

Many of the costs of a decision are explicit. To produce tennis rackets, for example, a manufacturer must pay out monies for raw materials, labor, rent, and other production costs. Such costs are identifiable and easy to calculate. Other costs are implicit. Instead of producing tennis rackets, the firm might have made a profit by producing ski poles. This profit must be foregone, however, as an opportunity cost of producing the tennis rackets. Explicit costs are readily recognized in the accounting records of a business. Implicit costs, on the other hand, are sacrifices that may not always be self-evident.

The concept of opportunity costs is so simple that it appears to be intuitively obvious. Of course decisions are based on costs; these costs are taken into account by the manager, and the best available option is selected. But unfortunately this is not always the case. Instead, decisions are often made without taking into account all available information and costs. Coaching the high school football team, for example, involves tremendous opportunity costs. The coach foregoes income he would receive if he had devoted the same number of hours to a part-time job. He gives up precious time that he could spend with his wife and family, or he might use the time to work on his car. Instead, he must pay a mechanic. This does not mean that coaching football is an irrational activity. Rather, the example illustrates the fact that the opportunity costs of any activity can be far-reaching. Some of the costs will be financial, others will be intangible and more difficult to define. If one does not carefully take into consideration all alternatives, it is possible to underestimate the real costs of any decision.

Application of the Concept

Calculation of Profits. Many small firms overstate their profits by failing to take into account opportunity costs. The business records of a small diner show a profit of $7,500.

Revenue		$40,000
Expenses		
Rent	$ 2,000	
Utilities	500	
Supplies	15,000	
Hired Labor	15,000	
		32,500
Net Profit		$ 7,500

The owner, however, has failed to take into account his opportunity costs. He has $10,000 invested in equipment and spends an average of 60 hours per week at the diner. In so doing, he has passed up the opportunity of depositing the $10,000 in a savings account and thus earning 5% per year in interest. This would amount to $500. He has also given up the opportunity of working as a short-order cook at a local restaurant where he could earn $3.00 per hour or $9,000 per year.

His accounts when revised to include opportunity costs would, therefore, show a loss of $2,000 rather than a profit of $7,500.

Revenue			$40,000
Expenses			
Rent		$ 2,000	
Utilities		500	
Supplies		15,000	
Hired labor		15,000	
Opportunity Costs			
Money Capital	$ 500		
Labor	9,000	9,500	
			42,000
Loss			$ 2,000

Production Possibility Curve. All economic systems have to decide what goods and services they want to produce. Because resources are scarce, no society can produce enough of each product to completely satisfy the needs of its citizens. This requires countries to produce certain commodities and to forego the production of others. This "foregone" production is the opportunity cost of the goods produced.

This concept can be illustrated with the use of a production possibility curve. Suppose, for example, that a country can produce only two goods--guns and butter. (Guns can be thought of as representing all military goods and butter as representing all civilian goods.) If that country uses all of its resources in an efficient manner, it will be able to produce any combination of guns and butter along the production possibility curve.

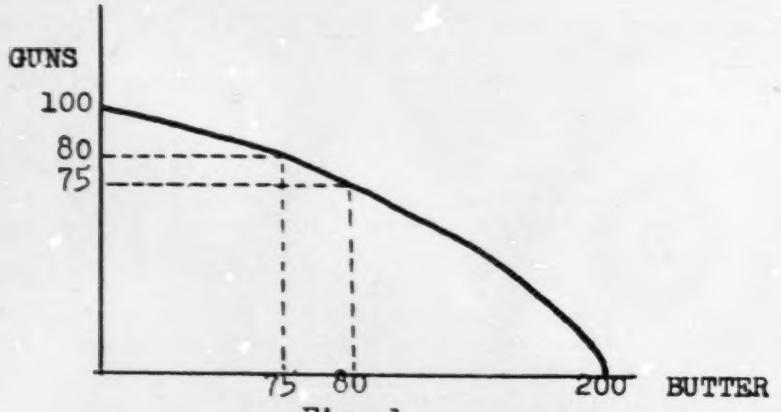

Fig. 1

If the country devotes all of its resources to the production of butter, it will be able to produce 200 units. If it devotes all of its available resources to the production of guns, it will be able to produce 100 units. Or, it might produce some combination of the two, for example, 75 guns and 100 units of butter. A country that is using its resources efficiently (production located somewhere along the production possibility curve) can only expand the production of one commodity by decreasing the production of the other. If the country wants to produce five more guns, it will have to give up 25 units of butter. The opportunity cost of each gun will be five units of butter.

This may seem obvious, but production opportunity cost has often been overlooked by very knowledgable people. President Johnson, for example, neglected to take the concept of a production possibility curve into account when he endeavored to expand the war on poverty (butter) and the war in Vietnam (guns) at the same time. The result was high levels of inflation and the eventual abandonment of his commitment to the war on poverty. Part of the opportunity cost of the Vietnam war was the curtailment of social policies which sought to reduce poverty in America.

Applying the Opportunity Cost Concept

1. If certain students are planning to go to college, ask them to estimate all the costs involved. Make sure they include as an opportunity cost the income foregone as a result of not going immediately to work. This income is frequently overlooked, and it can be larger than all other costs combined. The total costs of going to college (money costs and

opportunity costs) can then be compared to the expected income differential to determine if college appears to be a good investment for the individual student.

2. Ask students who are participating in interscholastic sports to itemize the opportunity costs of such participation.

3. If the teachers in your school are unionized, ask students to interview those teachers to determine if there are any opportunity costs of unionization. (Such costs might include loss of individuality, increased rigidities in scheduling, less effective communication between administrators and teachers, etc.)

4. Expenditures for National Security in 1976 are estimated to reach $94 billion. Ask selected students to indicate alternative uses of these funds. This will help students to appreciate what we are giving up in order to maintain our level of national defense.

5. If any of your students are working for a local business organization, have them interview the owner to ascertain whether opportunity costs, including personal contributions of time and money, are considered when estimating profits. (Remember, the opportunity cost should be valued at the highest alternative use.)

APPLICATIONS TO CURRICULUM

For each of the concepts developed in this bulletin, specific references are made to pages in the General Business and Business Organization and Management syllabi where the concept might appropriately be introduced. It is hoped that teachers of these two subjects will make a genuine effort to integrate the concept into the coverage of topics indicated. Obviously, this publication does not attempt to cover the range of economic understandings that are appropriate to General Business and Business Organization and Management. The bibliography supplied at the end of this brochure provides an excellent source of additional economic concepts appropriate to these courses.

General Business

1. (Page 13)* The scarcity of natural resources vs. unlimited human wants can be illustrated with a production possibility curve. The decision of "what goods to produce" will determine society's preferences at the present time.

Communist countries do not have a problem in achieving full employment or price stability. The question should be raised, however, as to what are the opportunity costs of achieving these goals with the methods that are used.

2. (Page 14) Economic growth can be illustrated by an outward expansion of the entire production possibility curve.

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* Reference to syllabus page.

3. (Page 16) Do corporations have the same problems identifying implicit costs as sole proprietorships?

4. (Page 20) The opportunity cost of more consumer goods is the capital goods (dams, steel mills, and highways) that must be foregone. This may result in slower production growth rates for future generations. Consumer goods exhaust resources that might be used for investment goods essential to the expansion of production in the future.

5. (Pages 22-?) The expansion of government activities leaves fewer resources for the production of civilian goods.

6. (Page 24) The opportunity cost of not raising taxes sufficiently to pay the full cost of government services (deficit spending) may be inflation if the economy is close to full employment.

7. (Page 30) Discuss with students the real costs of not achieving full employment. Among the costs that might be considered are output lost when men and machines are not being used to capacity, higher crime rates, loss of personal dignity, and many more.

8. (Page 68) Discuss with students the opportunity costs of saving at various types of savings institutions or by various forms of savings (savings banks vs. commercial banks vs. government securities).

9. (Page 70) Are there opportunity costs involved when one invests in the stock market?

10. (Page 82) The increased role of government in the protection of consumers is of concern to some individuals. What are some of the sacrifices that a society makes for such consumer protection? Are the benefits derived sufficient to justify these sacrifices?

11. (Page 85) In determining the "right" amount of education, one should estimate all the opportunity costs involved.

12. (Pages 86-7) In many instances, one must sacrifice a high initial salary to obtain a job with good possibilities for rapid promotion. Whether one chooses the job with a high initial salary or one with considerable advancement potential, opportunity costs are borne.

Business Organization and Management

1. (Pages 24-5) Discuss the opportunity cost of each type of business ownership. This will be similar to discussing the advantages and disadvantages of each type of ownership.

2. (Page 27) Introduce the concept of transfer pricing and the problems that result from vertical expansion.

3. (Pages 36-7) Ask students to investigate the "costs" of paying workers below the prevailing wage rates in the area. (Include the cost

of higher turnover, higher absenteeism, low employee morale, and lower-ability workers.)

4. (Page 39) Emphasize the opportunity costs involved when personal capital is used in one's own business.

5. (Pages 47-8) Inventory costs include the cost of investment capital (an opportunity cost), storage and handling, obsolescence, pilferage, taxes, ordering and set-up costs, and out-of-stock costs (also an opportunity cost). To determine the optimal inventory level, it is necessary to estimate all of these money and opportunity costs.

Supply and Demand

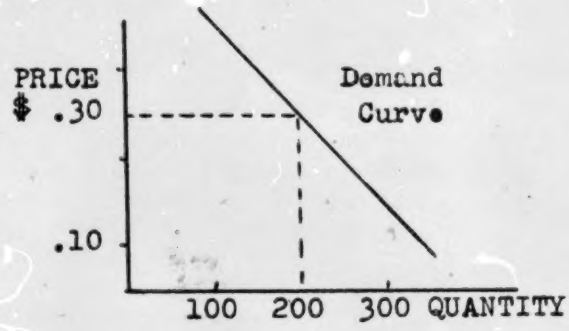
The Concept

"Even a parrot can learn economics. All you have to do is teach him to say 'supply and demand.' " This is an exaggeration to be sure. Nevertheless, understanding the concept of supply and demand is essential if one is to understand how prices are determined in our economy and the important role that prices play in the allocation of scarce resources.

A demand curve indicates the quantities of a commodity, say oranges, that people are willing and able to buy at various prices. The curve provides an answer to the hypothetical question: "How many oranges will be purchased if the price is _____?" The answer to this question can be arranged in table form or illustrated with a diagram.

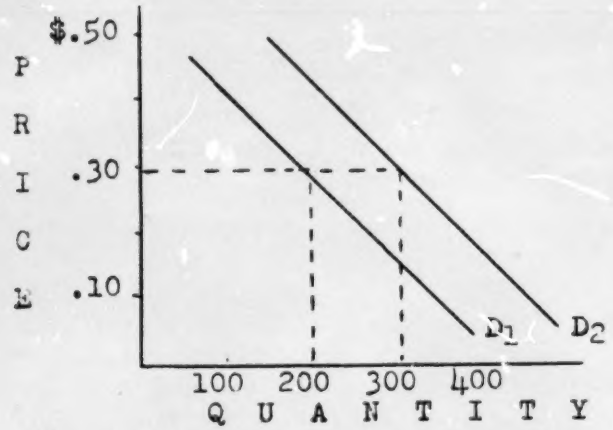
Price	Quantity Demanded
$.50	100
.30	200
.10	300

Demand Table



Nearly all demand curves are downward sloping, indicating that people buy more of a commodity as price is decreased. There are two primary reasons for downward sloping demand curves. First, as the price of any commodity (oranges) decreases, people will <u>substitute</u> that commodity (oranges) for other more costly commodities (apples, pears, and grapefruit). If the commodity is oranges, they will be thought of as a good buy--a bargain. Secondly, people are able to buy more with the same income as the price falls; their <u>real income</u> has, in effect, gone up. In our illustration, people will be able to afford more oranges.

It is important to remember that a demand curve indicates the amount people will buy at various prices (with all other variables held constant). Many variables influence the decision to purchase a particular item including income, preferences, quality of the product, prices of other goods, and so on. When one of these important variables changes, the entire demand schedule is likely to shift. Let's assume personal income, in general, is on the increase. We would expect, under these circumstances, that people would buy more of any commodity than before, at any given price.

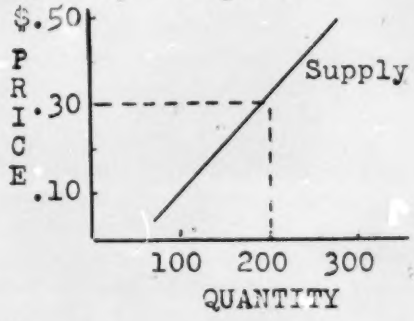


As illustrated above, the entire demand curve could be expected to shift to the right. When the price of oranges was $.30 per pound, for example, people would have bought 200 pounds. But now that their incomes have increased, they might be expected to buy 300 pounds at the same given price. You can undoubtedly think of many other factors that would cause the demand curve for a particular product to shift either to the right or to the left.

Supply

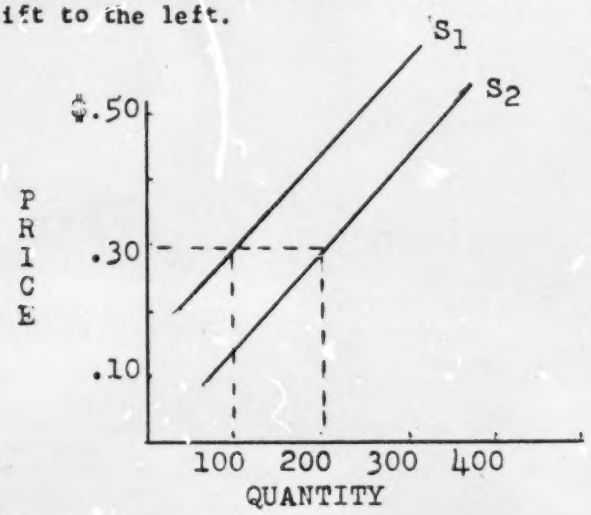
A demand curve is a reflection of consumer behavior. Producer behavior, on the other hand, is reflected in the supply curve. It indicates the amount of output that producers are willing to sell at various prices. A supply curve provides an answer to the hypothetical question: "How many oranges would be produced if the price were _____?" Again, the answer can be shown in a table or by a diagram.

Price	Quantity Supplied
$.50	300
.30	200
.10	100



Normally a supply curve is upward sloping, indicating that firms are willing to produce and sell more at higher prices. After a certain level of production is reached, however, increased output may cause the firm's cost per unit to increase. This can result from several factors. The firm may have to pay higher wages to attract more workers, or it may be necessary to settle for less productive workers. The business may have to use land not ideally suited for the production of the product. In the case of oranges, the company may seek to increase output by using more fertilizer, more water, or improved picking techniques. Because each of these factors may result in increased cost per unit of output, any business will be reluctant to incur such added costs unless they can be reasonably sure that a higher price will be received for the product.

Important variables, other than price, are held constant when drawing a supply schedule. As these variables change, the entire supply will shift. Examples of important variables include: wages, productivity, weather, and the prices of other crops. If in our example some of the orange trees were to suffer from a frost, the entire supply could be expected to shift to the left.



Before the frost, farmers might have supplied 200 oranges at a price of $.30 per pound. After the frost, they are predicted to supply 100. Can you think of other factors that would cause the entire supply curve to shift to the right or left?

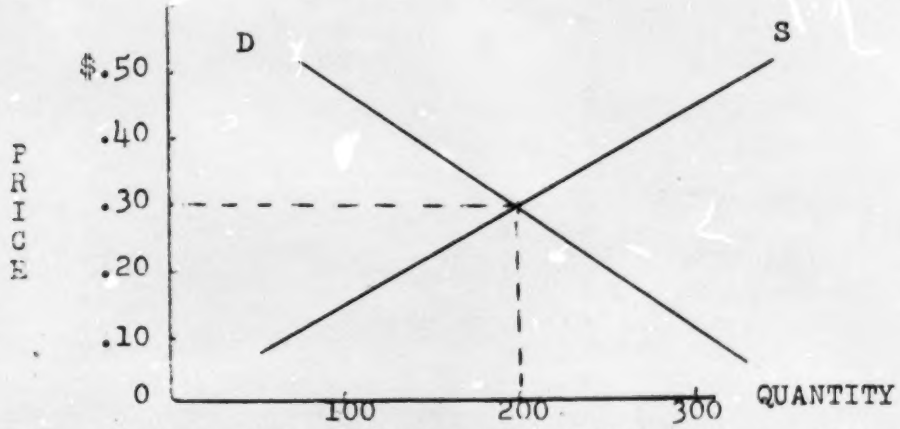
Equilibrium

Before integrating the concepts of supply and demand covered up to this point, it is important to understand the concept of equilibrium. An <u>equilibrium position</u> is a position from which there is no tendency to change. If we were to release a marble on the inside of a bowl, it would <u>not</u> remain still. (It would not be in a position of equilibrium.) Instead, it would move toward the bottom of the bowl. And after a few seconds, the marble would come to rest at the bottom of the bowl and have no further tendency to move. It would be in an equilibrium position. Furthermore, the equilibrium would only be changed if someone were to move the bowl or marble.

The marble is not in equilibrium. It will move downward.

The marble is in equilibrium. It will not have a tendency to move.

The equilibrium price of any commodity is determined by the combination of supply and demand. By themselves, these concepts are of minor importance. Together they determine the price and the quantity of sales. This conclusion can be illustrated by combining the supply and demand curves shown earlier into one diagram.

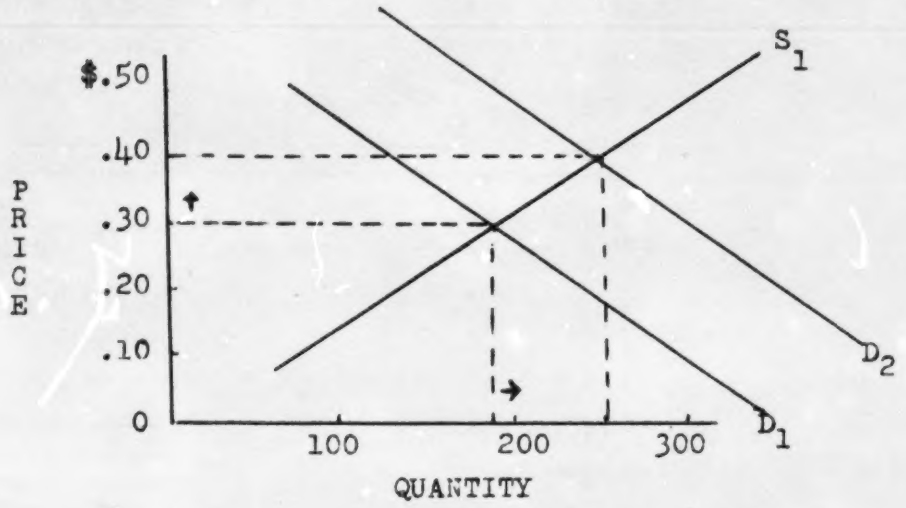


We have identified the price of $.30 as the equilibrium price (P_e) and the quantity of 200 the equilibrium quantity (Q_e) because once the price reaches $.30 there will be no further tendency for it to change. Furthermore, the quantity of oranges that consumers are willing to purchase will be equal to the quantity of oranges that firms are willing to produce. This will not be true at any other price. If the price were $.50, consumers would only purchase 100 pounds while farmers produced 300. Farmers would not sell all of their output and would be forced to lower their price. There would be a downward pressure on the price, causing it to fall. If the price were $.10, consumers would want to purchase 300 pounds of oranges while firms would only produce 100. Consumers would be able to buy all the oranges they wanted. They would consequently bid up the price, and prices would rise. Only at $.30 would there be no tendency for the price to change.

Consumers are always seeking lower prices, while producers are seeking higher prices. An equilibrium price represents the balancing of these two opposing forces. When there are many consumers and producers, we can say that the prices are determined by the interaction of all of these consumers and producers; that is, by the impersonal forces of the market.

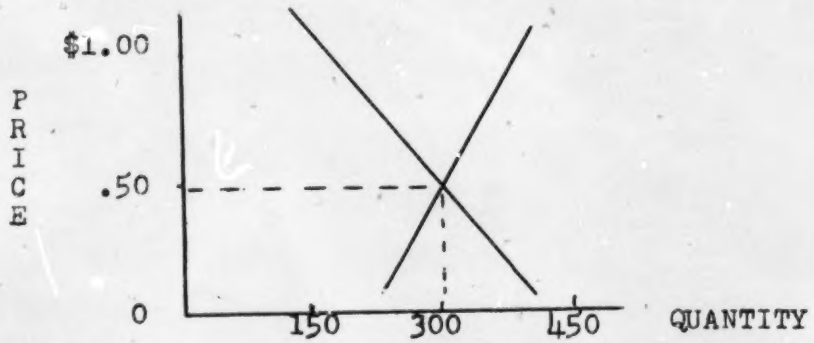
An equilibrium price may not always be a "good" price, however. It is simply a price that does not have a tendency to change. It will almost always be too low from the producer's point of view and too high from the standpoint of the consumers.

Furthermore, when one of the variables affecting supply or demand changes, the equilibrium price and quantity will also change. Consider once again our earlier example of an increase in consumers' income. This change will shift the demand to the right, causing the price to increase and the output produced to increase. The new equilibrium price will be $.40, and the new equilibrium level of output will be 250.

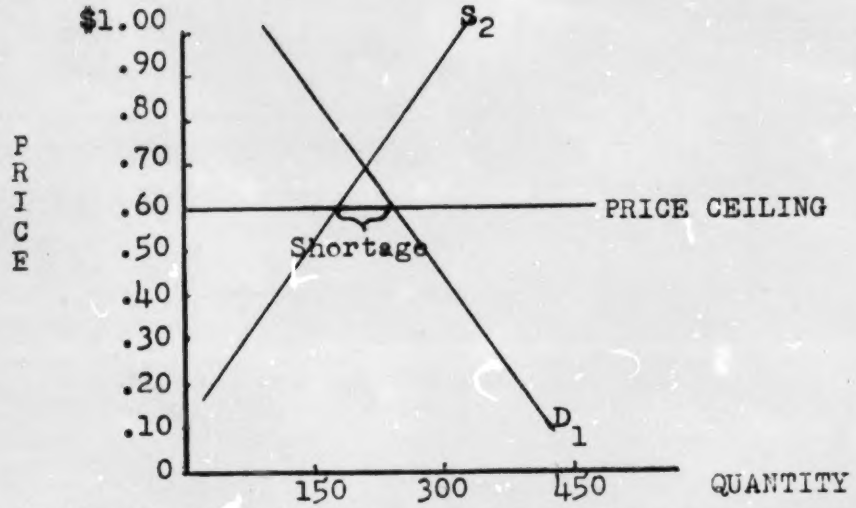


Applications of the Concept

The Gasoline Shortage. Two years ago there were long waiting lines at gasoline stations. Supply and demand analysis can help us understand the causes. Before the embargo by foreign petroleum producers, the price of gasoline was approximately $.50 per gallon. This was an equilibrium price, with consumers able to buy all the gasoline they wanted--in this example 300 gallons.

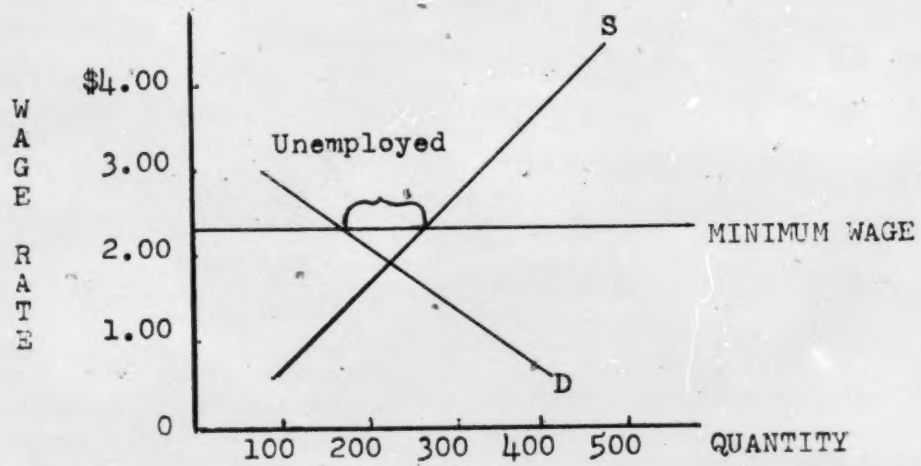


But the embargo shifted the supply schedule to the left. Had the price been determined by the market, it would have risen to $.70 per gallon and the consumption level reduced to 200 gallons. However, government intervention prevented the price per gallon from going above $.60. This was clearly not an equilibrium price; consumers wanted to purchase 250 gallons, while service stations had only 150 gallons to sell. There was a shortage (100 gallons) because the government would not allow the price to reach $.70. This shortage meant that some mechanism other than price had to be used to allocate the scarce resource--gasoline. Long waiting lines, quantity limitations, and preference to established customers all resulted from the fact that the price was below the equilibrium level. The forces of supply and demand were not in balance.



The Minimum Wage. The minimum wage was established to help the poor, working class. But does it really help? Supply and demand analysis can help us understand all the implication of minimum wage legislation.

Our previous examples have dealt with the commodity market--the market for goods and services. Another major type of market is the factor market--the market for land, labor, and money capital. In factor markets, the demanders are business firms and the suppliers are the households or owners of the factors of production.



The above diagram shows in graphic form the supply and demand for a certain type of low-wage worker (laborers) in a particular region. The equilibrium wage is $2.00, and the equilibrium level of employment is 200. If the government were to raise the minimum wage to $2.25, two changes would take place. More people would want to work because of the higher wage, and firms would seek to employ fewer workers. As a consequence, there would be a surplus of these particular workers, and unemployment would result. Firms might, for example, hire 150 workers, but 250 people would be seeking a job; thus, 100 people would find

themselves without a job. The increased minimum wage would have helped some--the 150 employed; but it would hurt others--not only the 100 persons unable to find a job, but the producers who must now pay the higher wages, and the consumers who will undoubtedly be called upon to pay increased prices.

Applying the Supply and Demand Concept

1. With the assistance of a bowl and marble, illustrate to the class the concept of equilibrium. Let the marble roll down one side of the bowl pointing out how it gradually comes to rest (equilibrium) at the bottom of the bowl. This demonstration may appear overly simplistic, but it will leave an impression that students will not readily forget.

2. Bring a pair of scissors and a piece of paper to class. As you cut the paper in half, raise the question, "Which blade of the sheers made the cut?" Was it the top blade or the bottom blade? Obviously, both blades were responsible; together and simultaneously they cut the paper.

This demonstration is analagous to the concept of price determination. What determines the price of a commodity--the demand or the supply? The answer is that both supply and demand determine the price.

3. The concept of a demand curve can be reinforced by asking students to take part in the formulation of the demand curve of the class for one or more popular items such as apples, candy bars, ice cream, or soda. "Prior to any discussion of the demand function, the instructor pulls from his pocket a large, polished, red apple. To generate immediate class involvement and establish some 'feel' for the reasonable upper limit of the price that a person in class would be willing to pay for an apple, the instructor auctions off the apple." (Weidenaar, 1972)* Indicate to the students that you will bring additional apples to class on the following day and that they are to fill out a purchase agreement that will indicate the number of apples they will buy. This will require that they indicate the quantity of apples they will demand at various prices ($.01 to $.25 for example). They must do this without knowing the price you will charge on the following day. Make sure that the students know that you will actually bring additional apples to class and sell them at a price to be announced that day. Students will be required to buy the number of apples that they ordered.

A sample purchase agreement to be used in connection with this program is shown at the top of the next page. Duplicate a supply of the form so that each student may have one copy of the form.

* Complete reference in the bibliography

Sample
PURCHASE AGREEMENT

I agree to purchase the following quantities of apples at the various prices indicated below on Thursday, October 21, 19__

_____
Signature

Example: If the price is $.05 per apple, I will buy _____ apples.

Price	Quantity
$.25	_____
.24	_____
	_____
	_____
.02	_____
.01	_____

After the students have returned their purchase agreements, the teacher should add up the total demand at each price. This will become the class' demand schedule for apples. Once the demand curve has been computed, the instructor can decide upon a price. The instructor may want to set a price which will maximize your profits. Obviously, the price determined will depend on the demand curve and the price the instructor must pay for apples. The students can then readily see their demand curve and how the selling price was determined.

In one demonstration of this variety, the teacher sold peaches to a class. The cost was $.20 and the quantity demanded at $.30 was 40. Thus the teacher was able to realize a profit of $4.00. Profits can be used to purchase some needed classroom equipment or given to a school organization. The important outcome, however, is that students gain a lasting understanding of demand.

4. The concept of an upward sloping supply curve is more difficult for many students to comprehend. They often ask why a firm would limit sales. They point out that firms appear to be willing to sell all they can of a given item at the existing price. Why then should a businessman only be willing to sell more than a given quantity if the price is increased?

If your school is near an agricultural area, ask selected students to visit a farmer. Have the farmer explain why his cost of a particular agricultural product would go up if he tried to expand production of the product. Ask the farmer what he would do if the current price of one of his crops dropped 50%. These activities will get students physically involved, and they will be better able to relate the real world to the supply and demand concepts they have been learning in class.

APPLICATIONS TO CURRICULUM

There are many places where supply and demand analysis can be integrated into your course in General Business and other basic business subjects. A few specific examples are provided below.

General Business

1. (Page 13)* The questions of "what goods to produce, how to produce them, and which consumers will receive them" are all answered in our economic system through the commodity and factor markets. For example, the number of oranges produced and consumed will be determined by the supply and demand for oranges.

2. (Pages 14-15) Supply and demand curves are simply abstract ways of looking at the market for consumer and producer goods.

3. (Page 28) Ask students to analyze the impact of a successful advertising campaign on the demand for oranges. If the advertisement involved a popular celebrity, would this make a difference?

4. (Page 37) Ask students to use supply and demand analysis to illustrate the impact of fast, cheap air transportation on the railroad passenger business.

5. (Pages 49-52) The demand for telephones has increased rapidly in the past 25 years. Nevertheless, the price for long distance calls has fallen. Use supply and demand analysis to explain this paradox.

6. (Pages 67-76) Interest rates charged for bank loans are often set by law. Use supply and demand analysis to understand the current mortgage market in your area. Are home loans available? If not, why not? Who benefits from restrictions on credit card interest rates?

7. (Pages 84-89) Ask your students to use supply and demand to explain why some occupations pay more than others. Doctors earn much more than lawyers on the average. Why?

Business Organization and Management

1. (Page 29) Use supply and demand to illustrate the impact of labor unions on wages. A labor union may, for example, cause the supply curve of workers to shift to the right causing higher wages but less employment.

2. (Pages 36-37) Supply and demand is the most widely used theory of wage determination.

3. (Page 53) Demand analysis is one approach to analyzing consumer buying habits. It concentrates on the price and allows for changes in other factors causing shifts in the demand curve.

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* Reference to syllabus page .

4. (Pages 56-61) Decision-making in any business establishment inevitably requires estimates of future prices. Supply and demand considerations are powerful tools for projecting future prices of both commodities and factors of production.

Industrial Organization

The Concept

The establishment of the United States of America in 1776 coincided with the publication of a famous book, The Wealth of Nations, written by the father of economics, Adam Smith. He emphasized two concepts in describing the workings of a capitalistic economic system--self-interest and competition. Self-interest was defined by Adam Smith as the driving force of a capitalistic system that induces people to work, produce efficiently, introduce new ideas, and invent new products. People are motivated by self-interest. Competition, on the other hand, is the regulator. Competition makes sure that no one producer can take advantage of consumers or workers. It makes sure that prices are reasonable and that the products people want are produced. Competition is the check on personal greed. Together, competition and self-interest, according to the theories of this early economist, result in efficient production of needed products at a reasonable cost.

But the world of Adam Smith is not necessarily the world of today. Self-interest is still alive and well, but how much competition is there in the American economy today? If one looks at the agricultural sector of our country with its thousands of small, independent producers, none of whom have any significant control over price, one would conclude that there is substantial competition. If, however, one looks at the cigarette, automobile, or steel industries, each with only a handful of large producers with the ability to control prices, one might conclude that there is very little competition in our present economic system in the United States and that the world of Adam Smith no longer exists.

Because there is such diversity among industries in America, it is dangerous to generalize. No simple description can reflect the variations in degrees of competition in or among industries. Instead, economists today have developed a framework for analyzing a particular industry. They focus on three aspects of the industry: market structure, market conduct, and market performance.

Market structure consists of the following features:

1. The degree of concentration. This is usually defined as the share of the industry's output produced by the four largest firms. Concentration ratios are very high in some industries (cigarettes = 81%, tires - 70%) and very low in others (women's dresses = 7%, furniture = 12%). Usually the higher the concentration ratio the less competition in an industry.

2. The degree of product differentiation. This is the extent to which the products of various firms are viewed as being different in the minds of buyers. A homogeneous product is one in which the product

of various producers is identical in the minds of buyers. Examples would include flat glass, steel, and synthetic rubber. Products that are significantly different include automobiles, television sets, and watches. In general, producer goods are much more homogeneous than consumer goods. Brand names are more important to consumers than industrial buyers.

3. The condition of entry. This refers to the ease or difficulty that new firms have in entering an industry. These barriers may prevent new firms from entering an industry even if high profits are being earned by the existing firms. Examples of entry barriers would include patent rights (important in the drug and camera industries), consumer attachment (important in the automobile, cigarette, and beer industries), economies of scale which necessitate substantial money capital outlays to start a business (important in automobiles and steel), natural resources (important in steel and aluminum), and government restrictions (important in the health care industry and in all public utilities such as telephone, gas, and electricity).

Market conduct describes the patterns of behavior of firms in an industry. Emphasis would be on:

Pricing policies. How do firms set their prices? Are the prices set by the impersonal forces of the market? Do firms use cost plus a percentage markup formula to set prices? Are there price leaders in the industry? Do firms have loss leaders; do they engage in price lining, discrimination, or skimming?

Sales policies. How much does the industry devote to advertising? What types of advertising strategies are used? Does the advertising benefit the consumer by making him better informed? To what extent are products varied to improve? Is it necessary to have a complete product line to be successful?

Interfirm behavior. How do the sellers interact with each other? Is there close and constant communication through trade associations? Is there implicit or explicit coordination of policies? Is the competition cut-throat or one of live and let live?

When looking at market performance, one is looking at the bottom line. Is the industry operating in the best interests of society? One would want to investigate:

Profit rates. Are they consistently above or below the national average? How are profits distributed? Are they retained to provide for research and development, or are they distributed to stockholders?

Efficiency. Do firms produce the largest amount possible, given their level of expenditure? Are they innovative--quick to introduce new products or better techniques of production? Are there too many or too few firms to allow least cost levels of production?

Analyzing an industry by focusing on these areas of structure, conduct, and performance and by attempting to answer the many subquestions in each category, one gets an excellent composite picture of an industry. The results of such industry studies show that there are tremendous variations--no two industries are alike. Nevertheless, a pattern begins to emerge, and most industries can be categorized into one of four major industrial types: those which represent pure competition, monopolistic competition, oligopoly, and monopoly. The table below highlights the key features of each type of industry.

Industry	Example	Number of Sellers	Type of Product	Ease of Entry
Pure Comp.	Agriculture	Many small Firms	Homogeneous	Very Easy
Mon. Comp.	Retailing	Many small Firms	Differentiated	Easy
Oligopoly	Automobiles	Few large Firms	Differentiated	Very Difficult
Oligopoly	Steel	Few large Firms	Homogeneous	Very Difficult
Monopoly	Electricity	One Firm	Homogeneous	Impossible

Application of the Concept

1. Should a highly concentrated industry be broken up into smaller companies to create greater competition? From time to time one hears cries from politicians or consumer advocates that the automobile, petroleum, or drug industry should be more dispersed. General Motors, for example, might be divided into five or six companies that would compete with each other and have different stockholders. Buick and Oldsmobile would be completely autonomous companies with different boards of directors and corporation presidents. Instead of being divisions of the same company as they are at present, they would become competing firms.

As we know, there is some precedent for such action. Shortly after the turn of the century, the American Tobacco Company and the Standard Oil Company were "divided" into several competitive firms. Each of the new firms seemed to be large enough to achieve the necessary economies of scale, and competition was increased.

Should other large corporations be broken up? The answer to this question is extremely complex, and a good answer based upon a complete analysis cannot be provided in this short paper. However, it is clear that an objective answer could undoubtedly be obtained after looking at the structure, conduct, and performance of the industry in question. Subdivision of major large corporations may increase competition and result in lower prices to consumers. It may also result in firms that are too small to be efficient and hence result in a raise in prices for consumers. A complete study of each proposed industry must be made before sound conclusions can be reached.

A preliminary study by Leonard Weiss (Case Studies in American Industry) suggests that subdivision should be considered in some industries. The table below compares actual concentration ratios with concentration ratios necessary for firms to be efficient. As you can readily see, some of the industries have higher concentration ratios than necessary.

Industry	Concentration Necessary For Efficiency (Percentage)	Actual Concentration (Percentage)
Typewriters	40 - 60	78
Tractors	40 - 60	67
Soap	16 - 24	63
Rubber Tires	5 - 11	78
Petroleum Refining	7	32
Automobiles	20 - 40	98
Cigarettes	20 - 24	82

2. Some industries consistently earn higher profits than others. Why? One important variable is the concentration ratio. Those industries with high concentration ratios tend to have higher than average profit rates. Examples would include the automobile, drug, and petroleum industries. Industries with low concentration ratios tend to have lower profit rates. Examples would include the lumber, apparel, and textile industries. These latter industries have few barriers to entry, while the high profit industries have substantial barriers.

The prospective entrepreneur is in somewhat of a bind. Industries that have high profit potential are extremely difficult to enter; it may take $10 billion to establish an efficient steel mill. On the other hand, industries that are easy to enter seldom are high profit makers. When they are, the high profits accrue to only a few of the companies, and the industry is often short-lived. Witness the recent experience of thousands of individuals who entered the cattle business when prices were high, only to see net earnings drop suddenly and dramatically. Retailing is another example. Each year thousands of new firms are started. Many of these businesses fail in the first year or two. Only a few of those remaining are able to earn higher than average profits. Entry is relatively easy and profits are modest.

Applying the Industrial Organization Concept

1. The best way for students to learn the concepts of business structure, conduct, and performance is to use case studies of selected industries. This can be facilitated by a prior description by the teacher of a particular industry. Case Studies in American Industry by Leonard Weiss contains excellent studies of the agricultural, electric power, steel, and retailing industries. Other interesting industries which have been written about in depth include the

pharmaceutical, petroleum, automobile, computer, and photographic equipment industries. Students should, if possible, be encouraged to select an industry which has production facilities nearby. They can then visit the firm and discuss the nature of competition in the industry and how it affects their advertising and pricing policies. Local firms will be especially willing to cooperate when they realize that the students are engaged in an organized and carefully planned study of the industry. As students become physically involved in visiting firms, abstract ideas will take on meaning.

A teacher might also invite a representative from a local firm to discuss before the entire class the nature of competition in the particular industry. The concepts of structure, conduct, and performance will provide a framework for both teacher and students to ask discerning questions.

2. Concentration ratios in most industries have changed little in the last 25 years. The fast-food industry is an exception with McDonald's dramatic growth. Traditionally, restaurants have been classified as being monopolistically competitive. Most communities are served by several locally owned family businesses with no one business really dominating the industry. A case study of the restaurant industry and the role that McDonald's has played in changing this structure will be a natural interest generator for most students who are likely to frequent one of the McDonald outlets. It would be interesting to explore the following questions:

a. Are there economies of scale in fast-food restaurants? If so, what is the optimal size firm? Do the economies result primarily from production, research, development, advertising, or other sources?

b. Have local restaurants in your area suffered from the recent opening of a McDonald's restaurant?

c. What are the prerequisites for obtaining a franchise?

d. How much autonomy do local managers have in the operation of their business?

e. Did changing economic conditions foster the development of McDonald's?

Are these developments likely to affect other areas of retailing?

3. High school students are very interested in automobiles. Have your students debate the advantages and disadvantages of breaking up the automobile industry.

APPLICATIONS TO CURRICULUM

General Business

1. (Page 14) Productivity, growth, and stability can also be used to measure the performance of a particular industry.

2. (Page 17) The classification of businesses can be analyzed even further through the consideration of conduct, structure, and performance.

3. (Page 23) Discuss the general characteristics of goods and services that result in their being provided by government rather than by private enterprise. Why are these services sometimes provided by the government and at other times by privately owned and regulated utilities?

4. (Page 28) Discuss the possibility of categorizing industries by the type of advertising they utilize. Is the advertising message usually informative, emotional-psychological, or both? Do the grocery and cigarette industries advertise in similar ways? Why not?

5. (Page 30) An important aspect of the conduct of an industry is the amount of money devoted to research and development.

6. (Page 31) What is meant by free competition? Is it really free when many industries have substantial barriers to entry?

7. (Page 34) The automobile industry is an excellent industry to study in depth with respect to structure, conduct, and performance. (It is very important to the economy of the country, it is highly concentrated, and the annual profit rates are well above the national average.)

8. (Page 35) There are many economists and politicians who question the usefulness of governmental regulatory bodies. This is especially true of agencies which regulate the railroad, airline, and trucking industries. Why is there so much controversy on this topic? See if students are able to identify some of the major unanswered questions raised with regard to governmental regulatory bodies.

9. (Pages 46-47) It would be interesting to study the competition between the mail, telephone, and telegraph companies. Are they relatively similar or substantially different services?

10. (page 55) Television advertising may have reduced competition among many companies. But, obviously, a business needs a substantial advertising budget to take advantage of national advertising. The larger the business, the greater the liklihood there will be fewer similar firms and less competition. To what extent does national advertising give McDonald's an advantage over similar local restaurants?

11. (Page 56) Competition among newspapers has decreased in most urban areas. Investigate how many newspapers are in your region today? How many were there 25 or 50 years ago? What factors can be attributed

to this decline in competition? If today there is only one paper in your community, does this mean that the paper has a monopoly and can pursue any course of action it so desires? What other media compete with newspapers?

12. (Page 72) New laws in New York State are changing the nature of competition in the banking industry. One such law allows banks to expand the number of branches. Will this lead to more or less competition? Compare the advantages of an independently owned local bank with one bank that has branches throughout the State.

Another recent banking law allows savings banks to issue checking accounts. Will this promote or inhibit competition? (The April 1976 issue of the Monthly Review of the Federal Reserve Bank of New York has an interesting article describing the conduct, structure, and performance of the banking industry in New York State.)

13. The health insurance industry is another interesting area for study. Be sure to investigate the role of Blue Cross and Blue Shield. Whose interest do these non-profit organizations serve--consumers, or hospitals and doctors?

14. (Page 83) What is the role performed by most trade associations? Do they promote competition or provide a vehicle for competing firms to collude and prevent serious competition?

Business Organization and Management

1. (Page 22) Patents can be an absolute barrier to entry in certain types of business. Their wisdom has been questioned by many economists. How can a patent be justified? Could a system of licensure avoid some of the problems associated with patents? Great Britain provides an interesting alternative.

2. (Page 22) Ask students to identify several industries in which there is little competition either as to price or product? Raise the question: Do manufacturers of automobiles compete as to price? Ask students to compare the price of a similarly equipped Ford, Cheverolet, and Plymouth.

3. (Page 27) Combinations and mergers are a very important aspect of modern industrial organization. The history of the merger movement in the United States is fascinating to study because most mergers have taken place in brief spurts of activity. Concentration ratios in most industries, however, have changed very little since World War I.

4. (Page 28) Government regulation helps to determine the structure of an industry. In turn, the structure of an industry helps to determine whether the government will become actively involved in the regulation of that industry.

5. In American Capitalism--The Theory of Countervailing Power, John Kenneth Galbraith suggests that powerful unions are most likely to develop in those industries with high concentration ratios. In such

cases, the power of large corporations has been offset by large labor unions. Ask students to try to cite examples of these points.

6. (Page 38) Some industries require large amounts of fixed capital, and this becomes a very important barrier to entry. Ask students to give examples.

7. (Pages 53-54) Whey is it that industrial goods tend to be more homogeneous in variety than consumer goods. Are the buyers better informed and more rational? Discuss this phenomenon with students.

8. (Pages 53-54) How do retailers attempt to differentiate their product from the competition in the market place? One feature of monopolistic competition is excess capacity. Ask students to investigate selected local retail stores to determine if they are operating short of full capacity. One way to find out the answer to this question is to ask managers if they would like more customers at existing prices. If the answer is "yes," they are likely operating short of full capacity, and the expansion of sales would lower their average costs. Some people argue that there are too many retail stores and that eliminating some of them would increase efficiency and result in the lowering of prices for customers. Do you agree? Would the customer continue to have the same wide choice?

Marginal Analysis

The Concept

Without training in economics, one is likely to consider many economic phenomena in terms of averages or totals. If you are able to have students begin to consider economic events or options in terms of their occurrence at the margin, an important economic concept will have been achieved.

One way to achieve this goal is through repeated use of examples of marginal analysis. If in discussions, repeated reference is made to the margin, eventually students will begin asking such questions as: "Is that the marginal cost or the total cost?" "How much output will one more worker produce?" When they do, you will know they are beginning to appreciate an important economic concept.

Staffing Decisions. If an employer is trying to determine how many employees to hire, he needs to know the additional output one more worker will produce. That is considered the "marginal product of the last worker." If the output of an additional worker can be sold for more than his salary, he should be hired. This principle is simple enough, but implementation is often difficult. It is often nearly impossible to estimate accurately the marginal product of a worker. Nevertheless, one must be aware that this information is essential before a correct decision can be assured with respect to business expansion.

Applications of the Concept

Personal Employment Decisions. All of us must make decisions concerning the number of hours we would like to spend on a weekly basis in the labor force. Frequently this decision is beyond our control because of union agreements or company policy, but one usually has some discretionary control over the amount of work activity.

Whether a person spends 20, 40, or 60 hours weekly at work will frequently depend on the type of job, the size of the worker's family and their desires, the prevailing wage rate, and many other factors. One other factor that is particularly important is the amount paid in federal income tax. It is essential to know how much of any earned income will be lost in income taxes.

The table below arranges the federal income tax schedule in a form that helps the determination of the "tax take." Note that both marginal and average tax rates are shown. The average tax rate is the percentage relationship between total taxes due and level of income. The marginal tax rate is an indication of how much these taxes will increase as income increases. Refer to the chart and consider the following examples:

- A person's current taxable annual income is $1,500. There is an opportunity to increase the annual income by $100 a year. The tax liability on this extra income will be $15 (15 percent marginal tax rate x $100). Take-home pay, consequently, will have been increased by $85.

- Another person is currently earning enough that his net taxable income is $50,000. This person also has the opportunity to increase his net taxable income by $100. The marginal tax rate of a person in this income bracket is 50 percent. Take-home pay will, therefore, be increased by only $50.

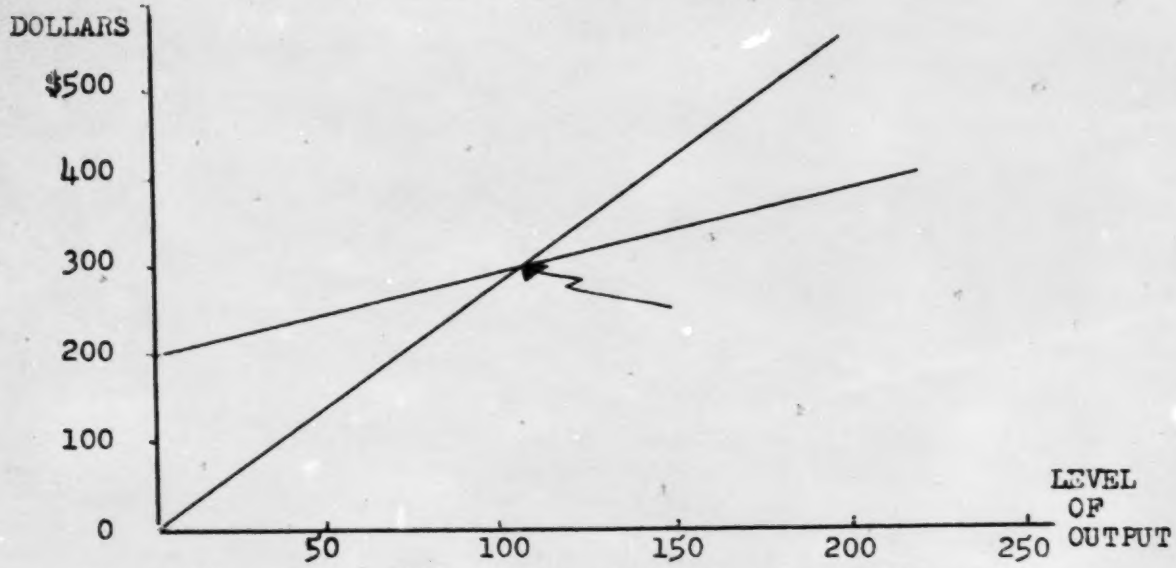
Note that there is a substantial difference between average and marginal rates. Each rate, however, can be useful. If one wants to determine his or her income tax liability, the average rate should be used. If one's total taxable income is $30,000, the total taxes will be $7,890 ($30,000 x .263). However, each additional $1 of taxable income will increase the tax "take" 39¢ ($1 x .39). Decisions concerning whether or not to work overtime or to accept an increase in salary involving much greater job responsibilities must be considered with reference to the marginal tax rate.

FEDERAL INCOME TAXES FOR MARRIED TAXPAYERS FILING JOINT RETURNS		
Taxable Income	Marginal Tax Rate	Average Tax rate*
$0 - 1,000	14%	14.0%
1,000 - 2,000	15	14.3
2,000 - 3,000	16	14.8
3,000 - 4,000	17	15.3
4,000 - 8,000	19	16.7
8,000 - 12,000	22	18.2
12,000 - 16,000	25	19.7
16,000 - 20,000	28	21.2
20,000 - 24,000	32	22.8
24,000 - 28,000	36	24.5
28,000 - 32,000	39	26.3
32,000 - 36,000	42	27.9
36,000 - 40,000	45	29.6
40,000 - 44,000	48	31.2
44,000 - 52,000	50	33.5

* Based on mean income of each bracket. The average tax rates have been rounded to the nearest tenth of one per cent.

Production Decisions. An important determination that production businesses must make is the level of output that will result in the highest level of profits. To make this determination, it is crucial that one understand the concepts of marginal costs and marginal revenue.

Most people are probably familiar with break-even analysis. Total costs and total revenue are projected on a graph for several levels of output. At first, total costs are greater than total revenue, but eventually total revenue will catch up and surpass total cost. The reason is that the marginal revenue (the revenue from selling one more unit) is greater than the marginal cost (the additional cost of producing one more unit). Although total revenue is at first below total cost (some fixed costs will be incurred even if nothing is produced), total revenue raises faster and eventually exceeds total costs.

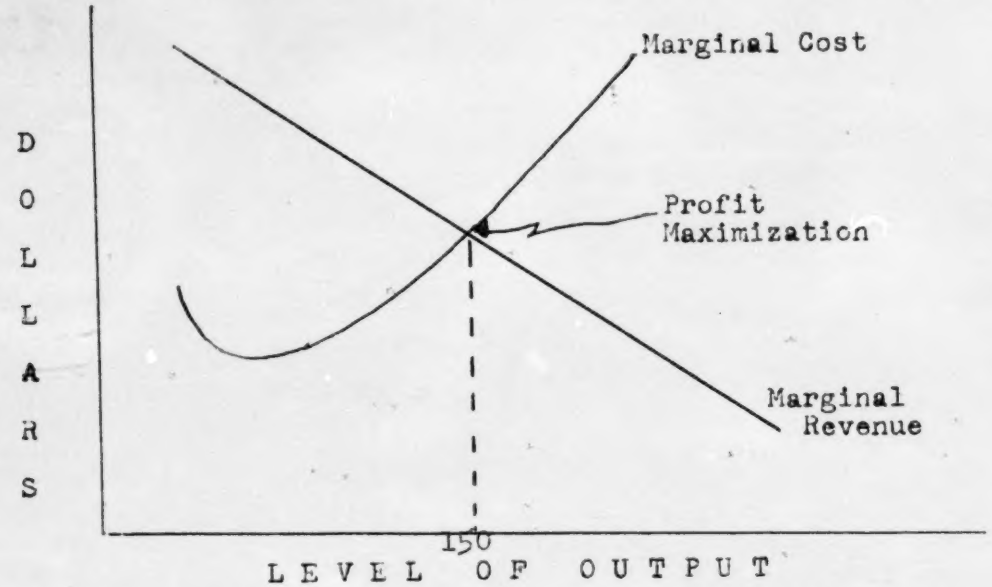


The point at which total revenue equals total cost is the break-even point. In the example above, the break-even point occurred at 100 units of production. If production and sales are below 100 units, a loss will be sustained. If production and sales are above 100 units, a profit is likely to result. A break-even chart is helpful for determining the minimum level of production that must be reached before losses can be eliminated.

Recently, in connection with an overseas study program, <u>fixed costs</u> of $5,000 had to be incurred. These were costs that had to be met regardless of the number of students accepted in the program. The <u>marginal cost</u> for each student was $800, and included expenses such as food, transportation, and housing. Each student was to be charged $1000 to provide marginal revenue. By constructing a break-even chart, the college concerned was able to determine that 25 students had to enroll in the overseas program before the program would break even. A total of 28 students took part in the study program, resulting in a net profit of $600.

The example used above is an over-simplification inasmuch as it assumes that marginal costs and marginal revenue are constant for all levels of output. For most firms, however, marginal revenue falls as output increases. This results from the fact that the price must be lowered to attract additional customers. The marginal cost usually

falls as production increases, but eventually an increase can be expected as higher wages are paid to attract additional workers or less competent help must be employed. A hypothetical but typical pattern involving marginal cost and marginal revenue is shown in the following graph:



In this case, the firm can maximize profits by producing at the level where marginal costs equal marginal revenue, or 150 units of output. If, instead, the firm produced only 100 units, profits could be increased by expanding production. Remember, profits are the difference between total revenue and total costs. If total revenue increases by more than total costs, profits must go up. On the other hand, if the producer should try to produce more than 150 units, total costs will go up by more than total revenue and profits will decrease. A firm will maximize profits by producing at the level of output where marginal revenue just equals marginal cost.

Applying the Marginal Analysis Concept

1. Catfish Hunter, a pitcher for the New York Yankees, is one of the highest paid athletes in professional sports. His recent contract signing was the beginning of a running debate among sports fans over whether or not he was worth the multi-million dollar amount involved. One means of answering this question is to measure his marginal contribution to the finances of the ballclub. This can be done by comparing the average attendance on days when he pitches with the average attendance when someone else is pitching. The difference might be considered Hunter's contribution. This attendance differential multiplied by the number of starts during the course of a baseball season multiplied by the average price of a ticket will provide a rough approximation of his worth to the team.

Ask your students to keep attendance figures for your school baseball team for the rest of the season to determine the "worth" of their favorite pitcher.

2. Assume that the regional manager of a local sales organization is considering hiring one more salesperson. She currently employs three salespersons in each of her two sales districts. She has estimated total sales expected by employing various numbers of salespersons and tabulated this information as shown below.

No. of Salespersons	Estimated Sales	
	District 1	District 2
1	$ 600,000	$300,000
2	1,000,000	550,000
3	1,200,000	750,000
4	1,300,000	900,000

She must decide whether to hire a fourth salesperson in district 1 or in district 2. Use marginal analysis to show that the next salesperson to be employed should be placed in district 2 even though average sales are projected to be less in that district.

3. Marginal analysis can also be important in making transportation decisions. It will help students to understand the differences in operational costs for various types of carriers. The table below compares cost of operation for three types of freight carriers.

Comparative Operating Costs		
Mode	Fixed Costs	Variable Costs
Truck	Low	High
Train	Moderate	Moderate
Ship	High	Low

Fixed costs are those which must be incurred regardless of the distance traveled. These would include items such as the cost of loading and unloading of the freight. Marginal costs are those costs which vary with the distance the freight is carried. These would include fuel and operating crew costs.

Have students visit or call local transportation agencies for estimates of the cost of shipping freight 100, 500, and 2000 miles on different types of carriers. Have them compute the average cost per mile and the marginal cost for each type of carrier. Compare the results with the above table.

APPLICATIONS TO CURRICULUM

General Business

1. (Page 24) The concept of marginal tax rates is very important in understanding federal and state income taxes.

2. (Page 34) Have students estimate fixed and marginal costs of operating an automobile for one year.

3. (Page 35) Compare the cost of a trip to Boston via private automobile vs. bus for one, two, three, and four people, respectively. Explain why the marginal cost for transporting one more person by automobile is near zero. Does this make hitch-hiking feasible?

4. (Page 42) Discuss fixed and marginal costs for various modes of transportation.

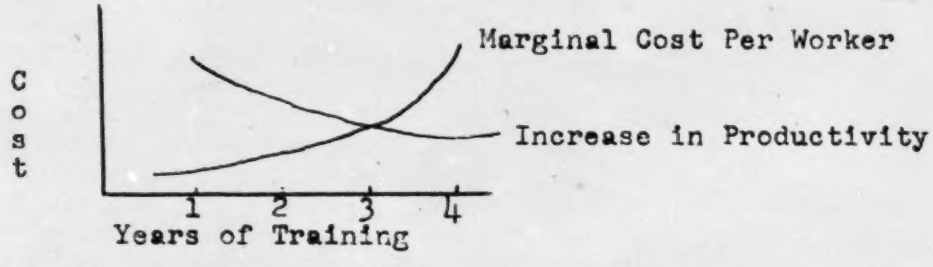
5. (Page 46) Use marginal cost analysis to explain why company advertising on national television is the cheapest means for reaching large numbers of people.

6. (Page 85) Explain how education increases one's marginal productivity and hence increases one's earning potential.

7. (Page 88) Analyze the impact on the marginal productivity of workers of:
   a. the purchase of new sophisticated equipment
   b. the hiring of additional workers
   c. on-the-job training
   d. higher wages

Business Organization and Management

1. (Page 33) Use the concept of marginal productivity to establish a procedure for determining the optimal amount of on-the-job training.



2. (Page 36) Marginal productivity is the most generally accepted theory of wage determination. The theory is not without limitations but has greater applicability to a capitalistic economy than any other explanation.

3. (Page 38) It is important to distinguish between fixed costs and variable costs (those that are affected by the level of output). Only variable costs affect marginal costs.

4. (Pages 40-41) When budgets are expanded (or cut, as most school budgets are experiencing), departments frequently receive the same percentage increase (or decrease), regardless of size or need. This is a simple procedure, but not as likely to yield optimal results as one that investigates the marginal contribution of each department and makes the largest cuts where marginal contributions are the lowest.

5. (Pages 46-47) Have students compare fixed and marginal costs for various means of freight transportation.

6. (Page 51) Discuss reasons why advertising is likely to exhibit diminishing marginal returns; that is, after a point, the impact of additional advertising will begin to decline.

Bibliography

OPPORTUNITY COST

Haynes, W. Warren and Henry, William R. Managerial Economics. Dallas: Business Publications, Inc., 1974.
Samuelson, Paul A. Economics. New York: McGraw-Hill, 1976.

SUPPLY AND DEMAND

North, Douglass C. and Miller, Roger L. The Economics of Public Issues. New York: Harper and Row, 1975.
Weidenaar, Dennis J. "A Classroom Experiment Demonstrating the Generation of a Market Demand Function and the Determination of Equilibrium Price," The Journal of Economic Education. (Spring, 1972), 94-100.

INDUSTRIAL ORGANIZATION

Galbraith, John Kenneth. American Capitalism: The Concept of Countervailing Power. Boston: Houghton Mifflin, 1956.
Galbraith, John Kenneth. The New Industrial State. Boston: Houghton Mifflin, 1967.
Kunreuther, Judith Berry. "Banking Structure in New York State: Progress and Prospects." Monthly Review. Federal Reserve Bank of New York. (April, 1976), 107-15.
Mueller, Willard F. A Primer on Monopoly and Competition. New York: Random House, 1970.
Weiss, Leonard W. Case Studies in American Industry. New York: John Wiley, 1971.

MARGINAL ANALYSIS

Dooley, Peter C. Elementary Price Theory. New York: Appleton-Century-Crofts, 1967.
Hoover, Edgar M. The Location of Economic Activity. New York: McGraw-Hill, 1963.
Kingsley, Emily P. et al. The Sesame Street One, Two, Three Story Book. New York: Random House, 1973.

GENERAL

National Business Education Association. Business Education Yesterday, Today, and Tomorrow. Yearbook No. 14. Reston, Virginia, 1976.
National Business Education Association. Foundations of Education for Business. Yearbook No. 13. Reston, Virginia, 1975.

ENROLLMENTS IN BUSINESS SUBJECTS FOR 1975-76

Course	Public	Private	Total
ADP 1	4,777	878	5,655
ADP 2	1,237	11	1,248
Keypunch Operation	668	28	696
Other ADP	1,737	242	1,979
Bookkeeping/Accounting 1	41,706	6,708	48,414
Bookkeeping/Accounting 2	8,065	767	8,832
Bookkeeping/Accounting 3	951	153	1,104
Accelerated Bookkeeping	2,032	332	2,364
Machine Bookkeeping	792	-	792
Recordkeeping 1	18,338	282	18,620
Recordkeeping 2	4,380	45	4,425
Recordkeeping 3	781	-	781
Business Mathematics	51,099	2,837	53,936
Business English	3,599	642	4,241
Business Law	21,098	4,220	25,318
Business Management	2,499	249	2,748
Consumer Education	3,884	1,981	5,865
Exploratory Business Education	5,464	171	5,635
General Business	34,799	2,724	37,523
Machine Shorthand 1	316	-	316
Machine Shorthand 2	214	-	214
Machine Shorthand & Trans.	290	-	290
Manual Shorthand 1	35,767	3,687	39,454
Manual Shorthand 2	7,323	877	8,200
Manual Shorthand 3	1,599	161	1,760
Manual Shorthand/Trans. 1	6,720	689	7,409
Manual Shorthand/Trans. 2	7,396	1,034	8,430
Accelerated Shorthand	510	24	534
Personal-Use Shorthand	3,382	289	3,671
Machine Transcription	581	-	581
Secretarial Practice	7,127	1,771	8,898
Office Practice 1	17,046	1,931	18,977
Office Practice 2	3,425	246	3,671
Clerical Practice 1	6,909	105	7,014
Clerical Practice 2	2,569	-	2,569
Office Reproduction Operation	140	-	140
12th Vocational	145	-	145
Typewriting 1	119,748	14,731	134,479
Typewriting 2	19,960	942	20,902
Typewriting 3	2,936	98	3,034
Introduction to Typewriting	14,189	-	14,189
Personal Typewriting	50,884	3,210	54,094
Accelerated Typewriting	1,835	146	1,981
Civil Service	520	-	520
Cooperative Work Experience	3,375	16	3,391
Orientation to Work	1,528	22	1,550
Other Business Subjects	15,704	1,411	17,115
Integrated Business Practice	2,431	-	2,431
Senior Intensive Stenography	586	-	586
Office Simulation	772	-	772
Total	543,833	53,660	597,493